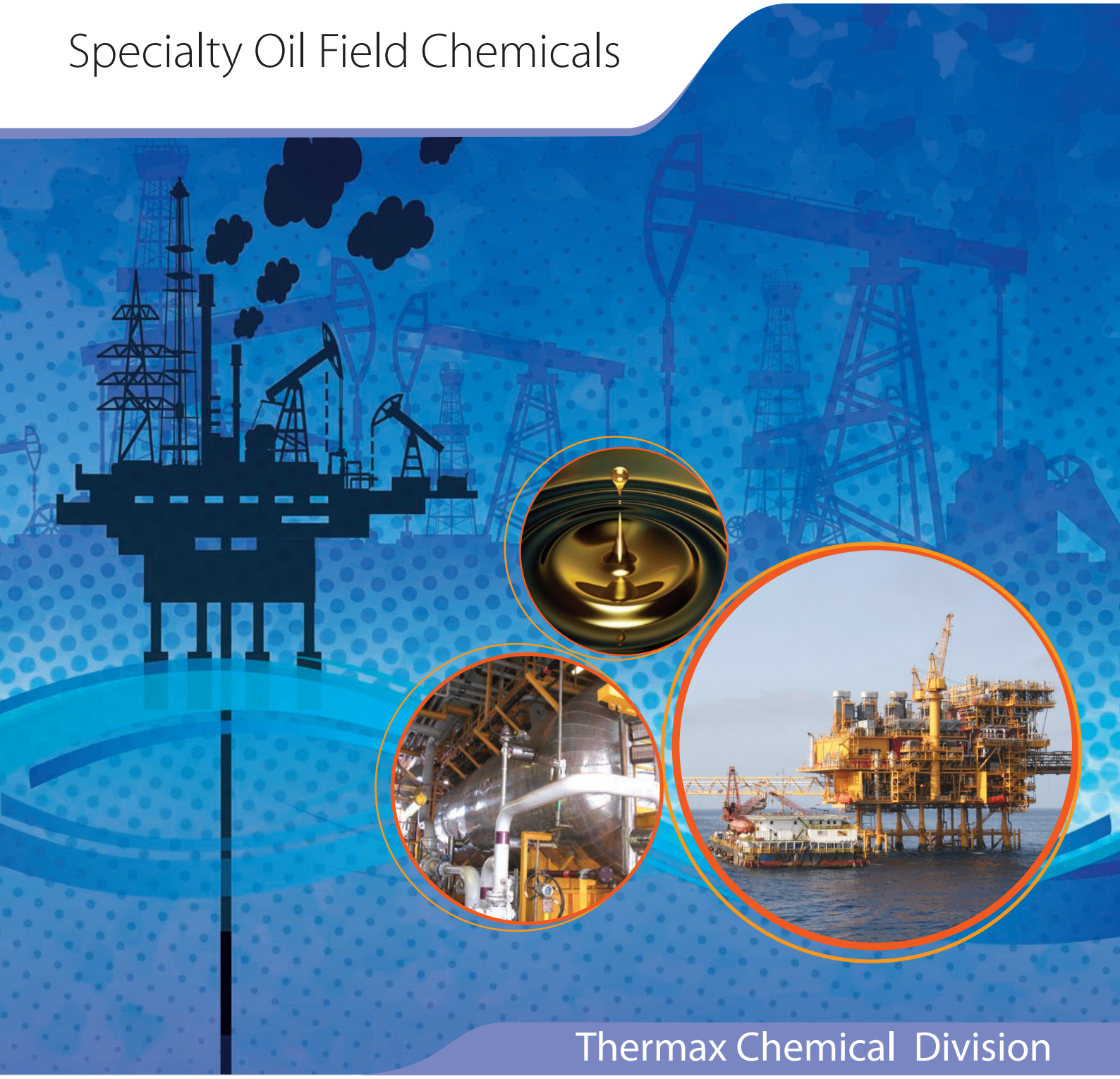
THERMAX

Specialty Oil Field Chemicals



Thermax Chemical Division

Sustainable Solutions in Energy & Environment

Thermax is an engineering company that helps business enterprises perform competitively and sustainably in global markets. In over 75 countries, clients make use of Thermax's products and solutions for energy efficient and eco-friendly operations: heating equipment and power plants that use a wide variety of fuels including solar energy; absorption chillers that use heat in place of electricity; waste heat recovery units; water & waste water management, air pollution control systems; performance improving chemicals.

The company provides its customers value added services – audits of energy and water, system modifications for optimal use of resources, annual maintenance contracts, energy rentals and O&M of power and water installations.

Thermax operations are supported by innovative R&D and partnerships with global technology majors. It has an international sales & service network spread over 24 countries and state-of-the art facilities (in India, Denmark and China) that manufacture to international standards.

Chemical Division

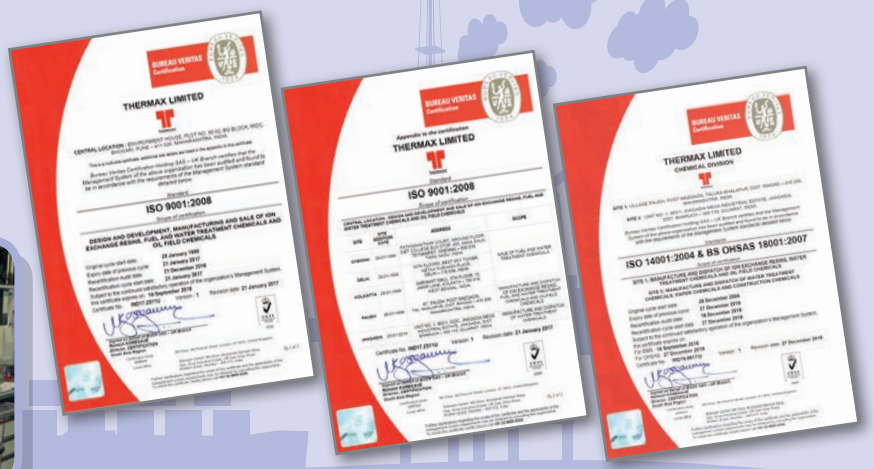
Thermax Chemical Division has been moving with a mission for decades : Innovation in the business areas of water, fuel and oil treatment–the three pillars of industrial processes. As the globe shifts towards ecological production techniques, we too are concentrating on cost-effective solutions to the growing problems of fuels, water, effluents and environment.

The oil field specialty chemicals from Thermax focus on treating crude oil and water, efficiently and cost effectively.

Thermax Oil Field Chemicals

- **MAXDIP** – Pour Point Depressant, Flow Improver
- **DEEMAX** – Demulsifier
- **OILMIN** – Deoiler, Reverse Demulsifier
- **CORROMIN** – Corrosion Inhibitor, Oxygen Scavenger
- **SCALEMIN** – Scale Inhibitor
- **BIOMIN** – Biocide
- **SULFAMIN** – H_2S Scavenger, FeS Scavenger
- **MAXOLYTE** – Coagulant, Flocculant

REACH
REGISTRATION, EVALUATION AND AUTHORISATION OF CHEMICALS



Flow Assurance

Pour Point Depressant- Flow Improver - Rheology Modifier

A wide variety of in-house developed polymers suitable for different crude characteristics.

Reduces Pour Point along with Rheology parameters at lower temperature.

Paraffin Dispersant

A mixture of surfactants and polymers to maintain paraffin in dispersed form and prevent its accumulation on pipeline walls.

Asphaltene Inhibitor

Unique blend of polymeric additives, an asphaltene inhibitor inhibits and disperse asphaltenes in crude oil.

Hydrate Inhibitor

Chemistry of amido amine salt, these products effectively control hydrates by not allowing them to deposit on the pipeline.

Asset Integrity

Oil Line Corrosion Inhibitor

Distinctive blend of Imidazoline and amine surfactants designed for corrosion prevention in production lines carrying oil, water and gases including H_2S.

Gas Line Corrosion Inhibitor

Distinctive blend of Imidazoline and amine surfactants designed for corrosion prevention in pipelines carrying mixture of gases.

FeS Scavenger

Proprietary mixture to dissolve and disperse FeS in problematic wells.

Antifoam

Silicon and glycol base antifoams to treat oil and water phases.

Scale Inhibitor

Advanced polymers namely ter-polymers and tetra-polymers are developed in house. These can be combined with organophosphonates to treat various scale formation in a wide range of oilfield waters.

Acid Corrosion Inhibitor

Distinctive blend of Imidazoline and amine surfactants designed for acidizing at high temperature and pressure.

H_2S Scavenger

Cyclic amine base and glycol base scavengers to treat liquid and gaseous fluids.

Biocide

Special chemistry to treat SRB and GAnB.

Water Injection

Injection Water Corrosion Inhibitors

Distinctive blend of Imidazoline and amine surfactants designed for water injection lines carrying various commingling waters.

Biocide

Broad spectrum Biocides with quaternary or surfactants to treat SRB and GAnB.

Unique blend of Biocides with polymer effectively control sessile bacteria.

H_2S Scavenger

Cyclic amine base and glycol base scavengers to treat liquid and gaseous fluids.

Coagulants, Flocculants, Water Clarifiers

Polymers and iron compounds to treat the inlet water from rivers, sea, bore wells.

Scale Inhibitor

Phosphonate free polymers namely ter-polymers and tetra-polymers developed in house to treat various scale formation in various commingling waters.

Oxygen Scavenger

Bisulphite base chemicals are used to reduce the oxygen content in injection water which will in turn reduce the corrosion severity.

Antifoam

Silicon and glycol base antifoams to treat oil and water phases.

Separation

Demulsifiers

Tailor made combination of surfactants to separate water-in-oil emulsions. Effective on diverse oil emulsions with water cut ranging from 5% to 40%.

Deoilers / Reverse Demulsifiers

Indigenous cationic polymers and modified polymers to treat oil-in-water emulsions. Aid to meet environmental norms for produced water.

Down Stream

Pour Point Depressant – for Lubricating Oil, Middle Distillate

Variety of in-house developed polymers to treat different lubricating oils and middle distillates.

Reduces Pour Point along with CFPP parameters at lower temperature.

Viscosity Index Improver

Different polymers to improve viscosity index of base oils to meet the norms.

De-Waxing Aid

Wide range of polymers to improve wax filtration rate and filtration cake quality.

Oilfield Chemicals Product Selection Guide

Application	Location	Field Parameters	Base/ Type	Brand Name	Typical recommended dosages
Produced Water Corrosion Inhibitor	Crude oil carrying pipelines containing oil, water & gas (CO_2, H_2S)	CO2 <= 1250 ppm H2S <= 1450 ppm Salinity <=25000 ppm Temp ~70°C	Filming Amine type	CORROMIN 3125	Range : 10-50 ppm based on gross liquid basis Typical : 35 ppm based on gross liquid basis
Produced Water Scale Inhibitor	Crude oil carrying pipelines containing oil, water & gas	Temp ~70°C Ca <=2000 ppm	Non phosphate base	SCALEMIN 3640	Range: 5-50 ppm Typical : 35 ppm
Produced Water Scale Inhibitor	Crude oil carrying pipelines containing oil, water & gas	Temp ~70°C Ca <=2000 ppm	Phosphate base	SCALEMIN 4200	Range : 5-50 ppm Typical : 35 ppm
Produced Water Biocide	Crude oil carrying pipelines containing oil, water & gas (CO_2, H_2S)	SRB > 100 counts	THPS base	BIOMIN 2750	Range : 300 - 1000 ppm once in week 4 hrs Typical : 500 ppm once in week 4 hrs
Gas Line Corrosion Inhibitor	Gas carrying pipelines containing after dehydrator and desulfuriser	Mixture	Filming Amine type	CORROMIN 2066	Range : 0.5-1 ltr/mmscft Typical : 1 ltr/mmscft
Demulsifier	Oil Water Separators	Water cut 1 - 60% Temp 55 - 80°C	Surfactant mixture	DEEMAX 8812, 3543, 3535, 3593, 3555	Range : 10-75 ppm Typical : 25 ppm
Pour Point Depressant	Net Oil, after separator	Free from water & gas	Polymer	MAXDIP 2245, 2270, 1622, SM1822, SM1622, 2278	Range : 100 - 1500 ppm Typical : 250 ppm
Deoiler, Reverse Demulsifier	Produced Water after Separator	Free from Free water & gas	Cationic Polymer	OILMIN 1000, 1190	Range : 25-200 ppm Typical : 50 ppm
Coagulant	Bore well, River, Sea water inlet	Raw water after filter	Ferric compound	MAXOLYTE 4700	Range : 1-5 ppm Typical : 3 ppm
Flocculant	Bore well, River, Sea water inlet	Raw water after filter	Cationic Polymer	MAXOLYTE 2000	Range : 0.2-2 ppm Typical : 1 ppm
Oxygen Scavenger	Bore well, River, Sea water, Produced water mixture tank	After Deoxygenation Tower	Bisulphite solution	CORROMIN 3165	Range : 9-12 ppm to treat 1 ppm DO Typical : 10 ppm to treat 1 ppm DO
Injection Water Corrosion Inhibitor	Injection water carrying pipelines containing water	DO <= 10 ppb Temp ~30°C	Filming Amine type	CORROMIN 3159	Range : 5-50 ppm Typical : 15 ppm
Injection Water Scale Inhibitor	Injection water carrying pipelines containing water	Temp ~30°C Ca <=2000 ppm	Non phosphate base	SCALEMIN 3640	Range : 5-20 ppm Typical : 15 ppm
Produced Water Biocide type 1	Injection water carrying pipelines containing water	SRB > 100 counts	THPS base	BIOMIN 2750	Range : 500 - 1500 ppm alternate once in week 4 hrs Typical : 1000 ppm alternate once in week 4 hrs
Produced Water Biocide type 2	Injection water carrying pipelines containing water	SRB > 100 counts	Glute, BKC base	BIOMIN 4020	Range : 500 - 1500 ppm alternate once in week 4 hrs Typical : 1000 ppm alternate once in week 4 hrs
Acid Corrosion Inhibitor	Acid Injection	HCL or HCL HF mixture, 1000 psi, 120°C	Organo inorganic compound mixture	ACIMIN 1400	Range : 0.1-1% v/v of acid Typical : 0.2% v/v of acid
Pour Point Depressant	Lubricating base oils	150N, 500N type	Polymer	MAXDIP 2810, 8733	Range : 1000-4000 ppm Typical : 1500 ppm

THERMAX

Sustainable Solutions in
Energy & Environment

Thermax Chemical Division

Environment House, 90-92, BG Block,
MIDC, Bhosari, Pune - 411026, India

Phone : +91 20 67156000

http://www.thermaxglobal.com/thermax-chemicals/

Thermax Inc.

16200 Park Row, Suite 190,
Houston, Texas 77084, USA

customerservice@thermax-usa.com

Phone : +1 281-600-1331-5

www.thermax-usa.com

www.thermaxglobal.com

Registered Office

D-13, MIDC Industrial Area, R D Aga Road,
Chinchwad, Pune 411019, India

enquiry@thermaxglobal.com

Customer Care: 1800-209-0115

www.linkedin.com/company-beta/166428

www.facebook.com/Thermaxglobal

Thermax Business Portfolio

- Heating
- Cooling
- Power
- Air Pollution Control
- Chemicals
- Water and Wastewater Solutions
- Solar
- Specialised Services

This brochure presents only some of our products and we reserve the right to amend any product details without notice. The photographs used in the brochure are indicative and may not match the actual plant.

design@synergydesign.in